

What is claimed is:

- 1       1. A silent chain for restraining chordal action and improving noise and oscillation  
2             performance comprising:  
  
3             a plurality of link plates interleaved in rows, each link plate having a pair of  
4             teeth, each tooth of the pair of teeth having an inside flank and  
5             outside flank;  
  
6             the inside flank and the outside flank being formed such that when the  
7             chain is pulled straight the inside flank of a first link plate in a link  
8             row projects relative to the outside flank of a second link plate in  
9             another link row adjacent to and overlapping with the link row,  
10            satisfying a relationship  $0.021 * P \leq \delta_{\max} \leq 0.063 * P$ , where  $P$  is a  
11            chain pitch and  $\delta_{\max}$  is a maximum projection of the inside flank of  
12            the first link plate relative to the outside flank of the second link  
13            plate.
- 1       2. The silent chain of claim 1, wherein the inside flank and the outside flank are  
2             formed such that  $0.035 \leq P * \delta_{\max} \leq 0.063 * p$  is satisfied.
- 1       3. The silent chain of claim 1, wherein the outside flank is formed of a flat surface and the  
2             inside flank is formed of a circular arc surface.
- 1       4. The silent chain of claim 1, wherein the link plates further comprises a first link plate  
2             having a first maximum projection  $\delta_{1\max}$  and a second link plate having a second  
3             maximum projection  $\delta_{2\max}$ , different than the first maximum projection  $\delta_{1\max}$ ,  
4             wherein the first link plate and the second link plate are in a random pattern along  
5             the length of the chain.
- 1       5. The silent chain of claim 1, wherein the link plates further comprises a first link  
2             plate having a first chain pitch  $P_1$  and a second link plate having a second  
3             chain pitch  $P_2$ , different than the first chain pitch  $P_1$ , wherein the first link  
4             plate and the second link plate are in a random pattern along the length of  
5             the chain.